ISO 9001 : 2000
REGISTERED FIRM
A10375

REFUGE CALL

(CDC/R/RS4 RADIAL WIRED)

- Remote units – Hands free or telephone handset options available
- Master to remote and remote to master calling
- Fully monitored for open and short circuit cable failures.
- Remotes connected via : 2 core radial to each remote.
- DESIGNED TO MEET THE APPROPRIATE REQUIREMENTS OF BS5839 Pt.9 2002

Disabled Refuge Call

CDC/R/RS4 Radial Wired

Installation manual

Contents

1) Installation Procedure

2) Commissioning Procedure

3) System Test

4) Fault Indications

Note: In all cases please use Drawing C51170/A (at the back of this manual) for reference to the above sections.

Radial Wired CDC/R/RS4 Central Enclosure

1) Installation Procedure (refer to Dwg. C51170/A)

Install central enclosure, **with cable entry gland at top**, at a height of approx 1.5 metres above floor height. Ensure fixings can support a load of 20 Kg.

Connect Field Cabling:

A - Connect 5A (lighting rated) A.C. Mains supply (220 - 240V) to appropriate (L)ive, (N)eutral and (E)arth terminals on the modular PSU unit DSP60-24, located on DIN Rail fixings at the right of the main enclosure (Max system load is 40 Watts).

N.B. Earth terminal must be connected to building earth.

B – Connect 2 core (+ screen) fire rated cable from each remote location to appropriate +/- terminal pair on main PCB CS867. (N.B. The '+/-'polarity idents are for reference only – the remote location connections are not polarity conscious). The cable screen (drain wire) is connected to the 3rd (SCN) terminal adjacent to each remote outstation (+/-) termination. No terminations are made to unused remote outstation terminals.

The following connections are optional, and are fitted only when the system specification requires these functions:

C – Volt free 'Fault Out' changeover contacts, for remote fault reporting. (Fault relay is normally energised).

D – Volt free changeover contact – changes state with any call on the system. Use if remote call indication is required. The adjacent 24v (+) and either or both of the two (- -) terminals may be used, in conjunction with these volt free terminals, to power a remote 24v DC audible and/ or visual external alarm. Up to 100mA @ 24V may be drawn from this DC output.

E – Short these terminals with a volt free closing contact (rated 50mA or higher) to enable the system 'Anti Tamper' feature.

(The 'Anti Tamper' feature enables the system to automatically disable incoming calls, whilst retaining system monitoring of the remote cabling and outstations. The system is returned to full operation with this contact opened).

J and K Repeater Cat 5 (RJ45) connectors

The two Cat5 (RJ45) sockets immediately below the 16 way ribbon connector **G** are only used where a remote control panel (repeater) is fitted. These are intended to be connected, via standard (non fire rated) UTP Cat 5 cables, to a cable junction box adjacent (within the same fire zone) to the main control panel.

From that location, the control functions are serialised, and forwarded to the remote control panel location, via 2 x 4 core (+ screen) enhanced cable (e.g. FP200 Plus 1.5mm, or equivalent). These cables are terminated to DIN rail terminals, which are connected in turn to PCB assemblies CS873, located in the back box of the repeater control panel, and assembly CS874, located in the junction box adjacent to the main control enclosure.

It is recommended that the cable cores are allocated as listed below, to minimise audio crosstalk between the line and data cables.

Cable 1:

1 0V (grey)
2 +V (brown)
3 DATA (black)
4 DATA (blue)

Cable 2:

1 LIN (grey)
2 RST (brown)
3 SW (black)
4 SW (blue)

The drain wire of both cables should be terminated to the appropriate ‘SCN’ terminals.

2) Commissioning Procedure (refer to Dwg C51170/A)

Fit battery loom as indicated on this drawing. CHECK RED LEAD IS CONNECTED TO THE RED (+) BATTERY TERMINAL.

Plug the two way cable loom terminal to the 'Batt. +/-' terminals, located at the lower right edge of the main control PCB type CS867. (N.B. note that the system will not power up, until A.C. power is applied).

Jumper Links

There are a number of jumper links located on the main PCB, and these will need to set correctly to ensure a fault free system.

Links L1 to L4 (F1 – F4)

These links are adjacent to the 4 remote fault indication LED's, which are identified F1 to F4. The links are all fitted as standard, and only those adjacent to remote locations **not** being used should be removed to clear fault indications.

If any of the remote locations being used exhibit an LED fault condition, it will be necessary to investigate the fault condition, and correct as required.

Do not remove the fault links from the locations in use. This will simply disable the fault reporting capability of that location.

Links L9 to L17

The functions of the remaining links are listed below. These are normally factory fitted to reflect the system specification, but correct selection may be checked by referring to the list below.

L9 – Fit to enable fault sounder.
L10 (A) – fit to enable battery load timer (Normal setting)
L10 (B) – fit to enable shortened (c.1 minute) battery load timer (Test setting only)
L11 – fit to disable battery load timer (NOT NORMALLY USED)
L12 – 13 – 14 -15 – Spare Links
L16 – Fit to enable repeater sync clock (only used with remote repeater fitted)
L17 – Fit for single handset operation
N.B. L16 and L17 are mutually exclusive. L17 is fitted under normal (single control panel) operation.

Apply A.C. power to the system.

Check if any fault indications are active. Refer to section 4 to identify any indicated faults, and correct if necessary. Note that the 'H.SET FAULT' LED will remain illuminated until the front panel is connected.

Control Panel Connection

Once all cable terminations are complete, the link settings above confirmed as correct, and all fault indications (except 'H.SET FAULT') are out, connect the front control panel to the main PCB by plugging in the 16 way ribbon connecter to the master handset socket **G**, located along the left hand edge of the main PCB. Note that this is not a locking connector. It is monitored such that a disconnection will register a fault condition to the fault relay, but is deliberately not supplied as a locking connector, to prevent damage in the event of the front panel being removed without consideration of the interconnecting cable. The provided connector will simply separate without causing any damage.

3) System Test (refer to Dwg. C51170/A)

Once the installation and commissioning procedures are complete, test for correct system operation, and fault reporting functions:

- Test all locations for correct call in / call out functions, by following the operational instructions listed on the Central control front panel. Repeat the tests for the repeater control panel, where fitted. Note that all control functions are indicated on both panels, and that the two master handset telephones can speak simultaneously, both to a selected remote location, and to each other.

- Remove primary power, to check correct operation of battery support supply. Central control will report a fault condition.

The fault sounder will be activated on the main control panel, and the fault LED's will be illuminated with a slow flash pattern.

The fault out relay will be de-energised.

Press the 'silence fault / lamp test' switch on the control panel momentarily, to silence the fault sounder to an intermittent state.

Open the main enclosure to confirm display of the 'mains fail' and 'charge fail' fault LED's located near the bottom edge of the main PCB ref. CS867.

Reconnect primary power.

Where utilised, check the function of the anti-tamper feature by applying a volt free closed contact (or temporary wire link) across the Anti-tamper terminals.

Under this condition, any call made from a remote hands free outstation will be automatically cancelled by the central controller.

The system will remain inactive from remote calling for c.30 seconds, to minimise nuisance recalling.

An open circuit at the anti-tamper terminals will allow normal system operation.

Note that making a call out from the master is not affected by the anti-tamper status.

Note that use of the anti-tamper facility is not recommended where telephone type remote outstations are used.

If a remote telephone is maliciously left off hook, the anti tamper circuitry will continue to attempt to clear the call until the handset is replaced. This will disable the remote fault monitoring system, until such time as the system is activated.

4) Fault Indications (refer to Dwg. C51170/A)

The LED function references on Dwg. C51170/A, and on PCB CS867, identify the function of all fault indications within the central enclosure. Note that any fault condition will cause the front panel fault Light Emitting Diodes (LED's) to indicate with a slow flashing pattern, and will activate the audible fault sounder as a continuous tone.

Pressing the 'Lamp Test / Silence Fault' switch will change the sounder function to intermittent. (A short 'reminder' bleep approx every 90 seconds). Generation of a second fault condition will reactivate the fault sounder to a continuous tone.

The following table lists the various fault LED's, and describes the action to be taken to help identify specific faults.

Fault Indication	**Nature of Fault**	**Action required to assist fault location**	**Action required to clear fault state, after correction**
1 – F1 to F4	Failure of associated remote unit.	Check for open circuit, or short circuit cable, or remote unit removed	-
2 –H.SET fault	Indicates failure of connection to master handset (or second master with repeater)	Check 16 way ribbon connector to front panel is correctly seated. Check master handset connection to front panel. Check cabling to repeater, where fitted.	-
3 – 'MAINS FAIL'	Failure of Primary (230VAC) supply	Check for primary power to enclosure –confirm 'DC OK' LED is on. Check for + 28V DC out from DSP60 Din Rail PSU.	Replace faulty DSP60 power supply if necessary.
4 – 'CHARGE FAIL'	Failure of battery connection or failure of primary supply.	Check battery connection loom, including the inline protection fuse. Replace if necessary (5A anti surge).	-
5 – 'BATT. FAIL'	Failure of support battery(s) under load condition.	Move L10 on CS867 to position 'B' to reduce load interval to approx 1 minute. Momentarily press reset switch **R** to start new test sequence, and allow 2 minutes for repeat test. If 'Batt Fail' indicator illuminates again, replace batteries.	Press Reset Switch **R**
6 – 'LOAD'	Indication of periodic battery load test.	No Fault- normal condition	-

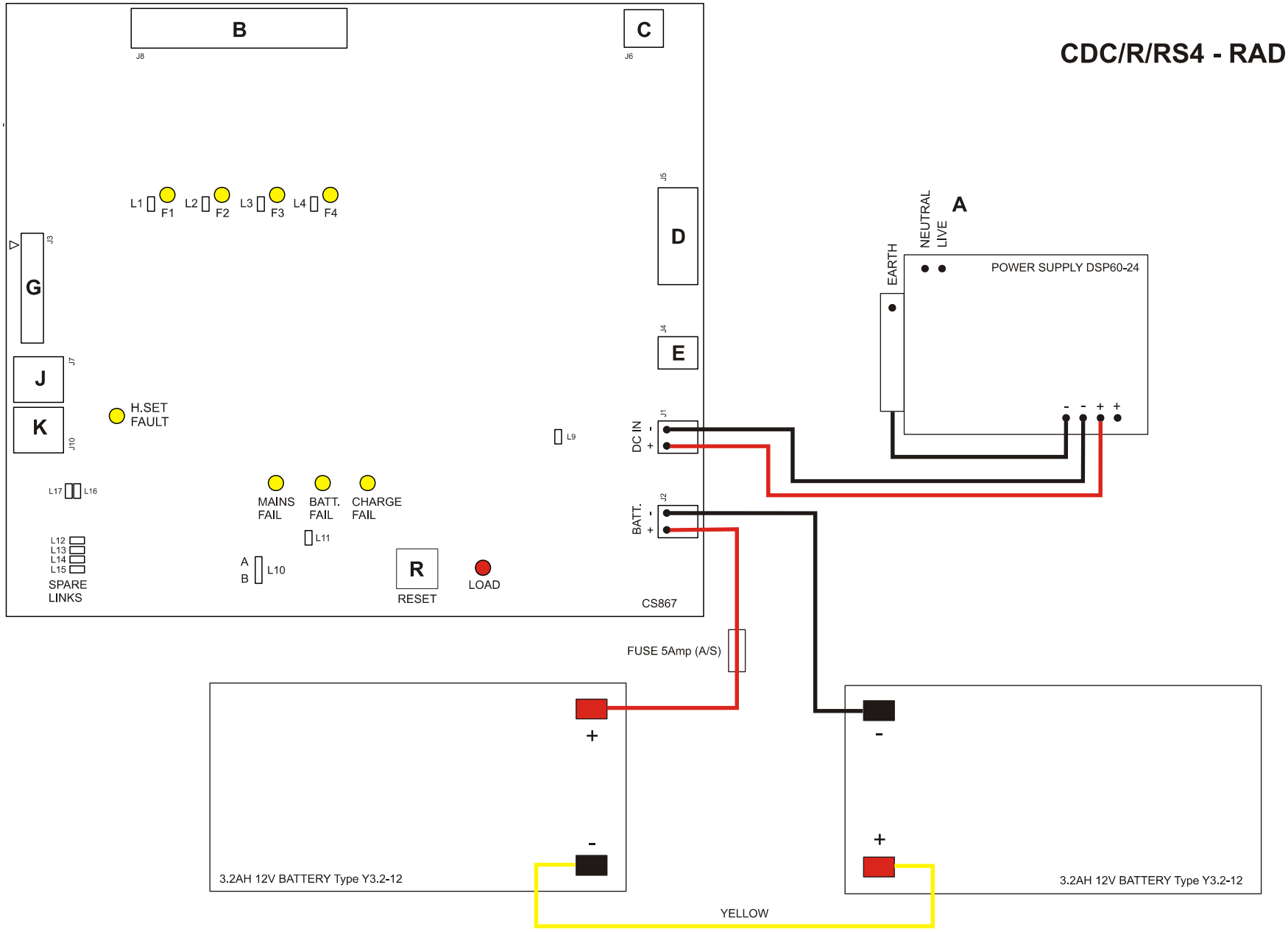
Note that any repeater control panel fault will be reported to the main control PCB CS867 as a 'H.SET' fault.

To isolate the cause of the fault further, it will be necessary to examine the fault LED's presented on PCB CS874, located in the repeater wiring junction box, adjacent to the main enclosure.

The fault table below will detail the function of each fault LED, located on PCB CS874

Fault Indication	**Nature of Fault**	**Action required to assist fault location**	**Action required to clear fault state, after correction**
1 – SW FLT	Indicates Failure of switch cable pair to control repeater	Check for open circuit, or short circuit cable.	-
2 – DATA FLT	Indicates failure of DATA cable pair to control repeater, or failure of remote decoder hardware	Check for open circuit, or short circuit cable. If cable OK, check for DATA LED function on PCB CS873. located in the control repeater back box. Replace assembly if necessary.	-
3 – CLOCK FAULT	Indicates failure of CAT cable connection between CS867 connector K and CS874 connector J2	Refit cable, or replace if damaged.	-

CDC/R/RS4 - RADIAL WIRED



C51170/A